Simplex

UL, ULC, CSFM Listed; FM Approved

Datasheet

TrueAlert Addressable Notification Appliances

Audible Notification Appliances,Electronic Horns, Model Series 49AO

Features

Individually addressed and controlled low power TrueAlert ES A/O (audible only) electronic horns:

- Advanced addressable notification controlled by ***IDNAC SLCs*** providing ***regulated 29 VDC*** allowing strobes on the same SLC to operate with lower current even under battery backup
- "T-tapped" connections for Class B circuits are enabled with wiring supervision to each appliance to simplify wiring (Class A circuits require in/out wiring)
- Self-Test Mode uses an on-board sensor to detect the horn output and then report its status to the control panel
- Horns are controlled separately from visible appliances on the same SLC with control panel selection of operation as: Temporal Code 3, March Time (selectable as 20, 60, or 120 bpm), Continuous, or Temporal Code 4
- Output of "high" or "low" (~6 dBA difference) selectable at the appliance or from the controller with FACP mode selected at the appliance
- Unobtrusive Magnet Test diagnostics are available to assist checkout and testing of appliances and wiring
- Electrical test point access without removing cover
- Compatible with legacy TrueAlert addressable systems for upgrade and replacement. See TrueAlert ES Horn LEGACY Compatibility Reference for more information.
- Listed to UL Standard 464 and ULC Standard S525

LED Indicator and Magnet Test feature:

- Appliance LED can be selected to display each polling cycle to indicate appliance supervision
- When the controller is in diagnostic mode, the Magnet Test pulses the LED to indicate appliance address and is selectable to also briefly sound the horn to confirm operation

Mechanical design features include:

- Rugged, high impact, flame retardant thermoplastic housing in red with white letters or white with red letters available with FIRE, FEU, or blank lettering
- Separate covers are available to change application type on-site or for replacement; covers can be easily removed without disturbing the connected housing and avoiding trouble conditions
- A separate mounting plate allows wiring to be completed before appliance is mounted; use with single gang, double gang, or 4-inch square box, flush or surface mount
- In/out wiring terminals for 18 AWG to 12 AWG
- Optional mounting adapters are available to cover surface mounted electrical boxes and to adapt to Simplex, 2975-9145 boxes
- Optional red wire guards See Product Selection for more information

Description

TrueAlert ES addressable horns

TrueAlert ES addressable horns are individually addressed audible notification appliances that receive power, supervision, and control signals from a Simplex fire alarm control panel providing **IDNAC** Signaling Line Circuits (SLCs). See TrueAlert ES Horn LEGACY Compatibility Reference for more information.

Figure 1: TrueAlert ES Addressable Horns are Available in Red with White Lettering and White with Red Lettering

TrueAlert ES Operation Advantage

TrueAlert ES addressable appliances on IDNAC SLCs provide separate audible (and visible) notification using a single two-wire circuit that also confirms connection to the individual notification appliance's electronic circuit. This operation increases circuit supervision integrity by providing supervision that extends beyond the appliance wiring connections.

Reduced current allows efficient IDNAC SLC operation

With *IDNAC SLCs*, a *constant* 29 VDC source voltage is maintained, even during battery standby, allowing strobes on the same SLC to operate at higher voltage with lower current and ensuring a consistent current draw and voltage drop margin under both primary power and secondary battery standby. Efficiencies include wiring distances up to two to three times farther than with conventional notification, or support for more appliances per IDNAC SLC, or use of smaller gauge wiring, or combinations of these benefits, all providing installation and maintenance savings with high assurance that appliances that operate during normal system testing will operate during worst case alarm conditions.

Reducing Installation and Testing Time

With separate controls on the same two-wire SLC, installation time and expense for both retrofit and new construction can be significantly reduced. When Class B wiring is used, wiring can be "T" tapped, allowing more savings in distance, wire, conduit (size and utilization), and overall installation efficiency. Use of Self-Test and Magnet Test features improves installation efficiency. TrueAlert device reports conveniently identify information about each connected appliance.

These products have been approved by the California State Fire Marshal (CSFM) pursuant to Section 13144.1 of the California Health and Safety Code. See CSFM Listing 7135-0026:0372 for allowable values and/or conditions concerning material presented in this document. Additional listings may be applicable; contact your local Simplex product supplier for the latest status.

TrueAlert ES Diagnostics

Test Features

When IDNAC SLCs are in diagnostic mode, Self-Test and Magnet Test features provide individual appliance testing. With the Self-Test feature, appliance operation can be confirmed without leaving the control panel. Additionally, each appliance's LED can be selected to pulse when it receives a supervision poll during normal operation.

Self-Test Details

Selecting Self-Test Mode from the control panel allows on-board sensors, depending on the device type, to detect its own strobe or horn output and then report their status to the control panel. Operation is by selected VNAC appliance groups and is either automatic (all briefly simultaneously activated) or individually activated by applying a magnet. (Refer to control panel data sheet for more Self-Test information, see TrueAlert ES Horn LEGACY Compatibility Reference for more information.

Silent Appliance Magnet Test

In this test mode, in response to application of a magnet, the appliance LED pulses sequentially to conveniently indicate the appliance's address.

Operational Appliance Magnet Test

In this test mode, after the address is indicated by pulsing the appliance LED, the horn will briefly sound to indicate proper operation.

TrueStart Instrument Two (TSIT)

The 2nd generation of the Simplex TrueStart Test Instrument can also test IDNAC SLC wiring and TrueAlert ES appliances as well as IDCs, NACs, and IDNet communications before connection to the control panel. Please contact your local Simplex representative for additional information.

TrueAlert Addressable Wiring Isolator

Isolator Model 4905-9929 is available for remote mounting on TrueAlert addressable circuits to isolate short circuited wiring from functioning wiring. See data sheet *S4905-0001*.

Product Selection

Table 1: TrueAlert ES Addressable Electronic Horns

Model	Cover Color	Wording	Description	Dimensions with Cover
49AO-WRF 49AO-WRF-BA	Red	FIRE	TrueAlert ES addressable AO (audible only) horn appliance, includes cover and matching mounting plate	5 ⅛" H x 5" W x 1 ½" D (130 mm x 127 mm x 38 mm)
49AO-WWF	White			
49AO-WRQ	Red	FEU		
49AO-WRS	Red	Simplex logo only		
49AO-APPLW 49AO-APPLW-BA	Select cover and mounting plate separately			

Table 2: Separate Mounting Plate Required when ordering model 49AO-APPLW

SKU	Color	Description
49MP-AVVOWR	Red	Mounting plate, select color to match cover
49MP-AVVOWW	White	

Table 3: Separate Covers (Required when ordering model 49AO-APPLW(-BA))

Model*	Color	Wording
49AOC-WRFIRE	Red	FIRE
49AOC-WWFIRE	White	
49AOC-WRFEU	Red	FEU
49AOC-WWFEU	White	
49AOC-WRBLNG	Red	FEU/FIRE
49AOC-WRS	Red	Simplex logo only
49AOC-WWS	White	
49AOC-RBLANK	Red	Blank
49AOC-WBLANK	White	

Table 4: Mounting Adapters and Wire Guard

Model	Color	Description	Dimensions
4905-9937	Red	Surface Mount Adapter Skirt	5 3/8 in. H x 5 1/4 in. W x 1 5/8 in. D (136 mm x 133 mm x 41 mm) Total depth with horn = 3 1/8 in. (79 mm)
4905-9940	White		
4905-9931	Red Adapter Plate for mounting to Simplex 2975-9145 Box (typically for retrofit, mount vertical or horizontal)		8 5/16 in. x 5 3/4 in. x 0.060 in. Thick (211 mm x 146 mm x 1.5 mm)

Table 4: Mounting Adapters and Wire Guard

Model	Color	Description	Dimensions
2975-9145	Red Mounting Box, requires 4905-9931 Adapter Plate		7 7/8 in. x 5 1/8 in. x 2 3/4 in. D (200 mm x 130 mm x 70 mm)
4905-9961	Red wire guard with mounting plate, compatible with semiflush or surface mount boxes		6 1/16 in. H x 6 1/16 in. W x 3 1/8 in. D (154 mm x 154 mm x 79 mm)

TrueAlert ES Horn Specifications

Table 5: Electrical Ratings

Typical Operating Voltage Range	23 VDC to 31 VDC, Special Application (see below for 17 VDC ratings)
RMS Current Rating	23 mA maximum @ 31 VDC (use this for all applications)
Supervisory Requirements	1 unit load (= 0.8 mA control panel current)
IDNAC SLC Loading	Maximum of 127 addresses per SLC, 139 unit loads

Table 6: Sound Output Ratings @ 10 ft (3 m) @ 23 VDC (with IDNAC SLCs)

Sound Type/Setting	Steady/High	Steady/Low	Coded/High	Coded/Low
Reverberant Chamber, UL 464 Test	89.8 dBA	83.4 dBA	86 dBA	79.2 dBA
Anechoic Chamber, ULC 525 Test	92.5 dBA	86.7 dBA	92.4 dBA	86.6 dBA

Table 7: Sound Output Dispersion per ULC S541 Anechoic Testing

Horizontal	-3 dBA @ 61.5° at both left and right from center; -4.6 dBA @ 90° from center
Vertical	-3 dBA @ 62° above and below center; -3.5 dBA @ 90° from center

Table 8: General Specifications

Sound Characteristics	2400 to 3700 Hz sweep, modulated at 120 Hz rate
Temperature Range	32° to 122° F (0° to 50° C)
Humidity Range	10% to 93%, non-condensing @ 104° F (40° C)
Connections	Terminal blocks on mounting plate for 18 AWG to 12 AWG (0.82 mm2 to 3.31 mm2); two wires per terminal for in/out wiring
Installation Instructions	579-1034
IDNAC SLC Wiring Specifications (refer to control panel installation instructions for more information)	UTP, unshielded twisted pair recommended
	Maximum wire length allowed with "T-Taps" for Class B wiring per SLC = 10,000 ft (3048 m)
	Maximum wire length to any appliance = 4000 ft (1219 m)
Note: UL 464 test coded values are typical of the output measured with a Temporal or a March Time pattern and with a sound level meter reading on a "fast" setting. Under the same test conditions, coded horn output "peak" sound level readings are typically 4 dBA higher. Anechoic horn output ratings are typically more representative of actual installed sound output.	

IDNAC SLC Controller Compatibility Reference

Table 9: IDNAC SLC Controller Compatibility Reference

Compatible Controllers	Data Sheet Reference	Controller Output	IDNAC SLC Output Voltage	Appliance Voltage Design Reference
4100ES with EPS+ or EPS Power Supply	*S4100-0100*	IDNAC SLC	29 VDC (regulated)	23 VDC (with 6 VDC drop)
4009 IDNAC Repeater	*S4009-0004*			
4007ES with IDNAC Notification	*S4007-0002*			
4010ES with ESS Enhanced System Supply	*S4010-0011*			

TrueAlert ES Horn LEGACY Compatibility Reference

Table 10: Compatibility Reference

Compatible Controller	Data Sheet Reference	Controller Output	Available Horn Control	Appliance Voltage Minimum
4100ES or 4100U with TrueAlert Power Supply	*S4100-0031*	TrueAlert Addressable SLC	Continuous, Temporal Code 3, and March Time of 60 or 120 bpm	17 VDC
4009 TPS, Remote TrueAlert Power Supply	*S4100-0037*			
TrueAlert Addressable Controller (4009T)	*S4009-0003*			

Table 11: Electrical Ratings Differences for Legacy Applications (refer to above specifications for other ratings)

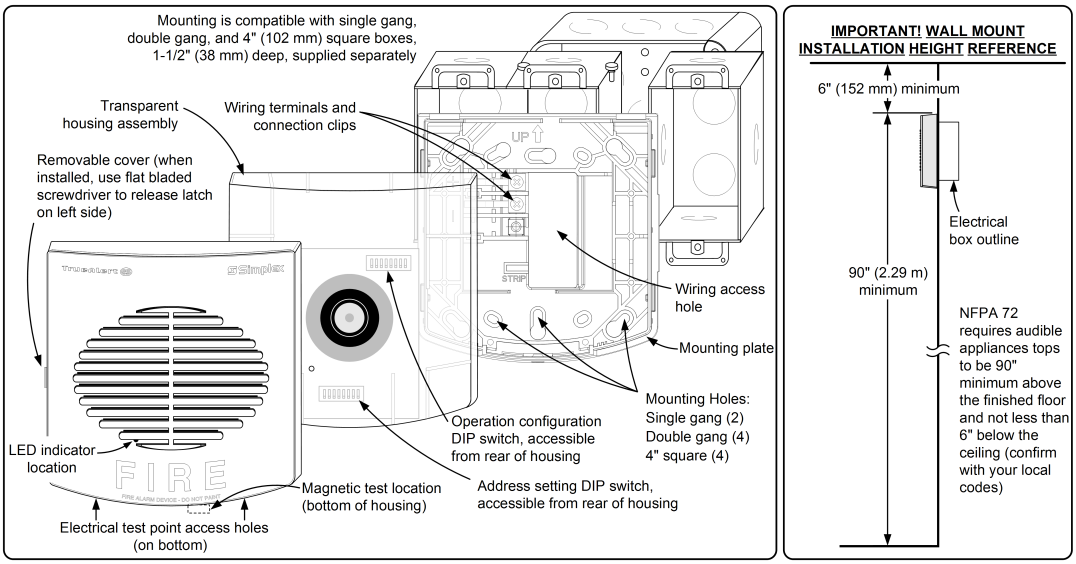
Range	Details
Voltage Range	17 VDC to 31 VDC, Special Application

Table 12: Sound Output Ratings @ 10 ft (3 m) @ 17 VDC

Sound Type/Setting	Steady/High	Steady/Low	Coded/High	Coded/Low
Reverberant Chamber, UL 464 Test	87.6 dBA	80.6 dBA	83.1 dBA	76.9 dBA
Anechoic Chamber, ULC 525 Test	89.9 dBA	84.1 dBA	89.6 dBA	83.6 dBA

Installation Reference

Figure 2: 49AO install reference



Adapter Plate and Surface Mount Installation Reference

Figure 3: Adapter Plate and Surface Mount Installation Reference